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JOHNS HOPKINS
MEDICINE

Michael C. Ain, M.D.
Associate Professor, Orthopaedic and Neurosurgery
Director, Orthopaedic Residency Program

November 28, 2006

Layser & Freiwald, P.C.
 Patricia M. Giordano, Esquire
 1500 Walnut Street
 Eighteenth Floor
 Philadelphia, PA 19102
 RE: Alyn Hotho, a minor v. Rossi, MD, et al.

I have reviewed medical records, the complaint and x-rays pertaining to the above case. A list of the records that I have reviewed is attached. In April, 2003, Alyn was diagnosed with DDH of the left hip. As a result of the diagnosis, Alyn underwent a closed reduction at approximately eight months of age, and then later went on to have an iliac osteotomy performed. Starting as far back as February 11, 2004, there were some mild changes of avascular necrosis ("AVN") of the left hip present. As such, to a reasonable degree of medical certainty, the DDH was present for several months before February. By July 9, 2004, there was definitely evidence of AVN present, both on the acetabulum and on the femoral head side. On February 22, 2005, looking at the x-rays, there was AVN and the femoral neck was going into varus and the ossific nucleus was small, relative to the other side.

In the most recent x-ray that I have available to me, which is May 25, 2006, there was AVN, varus of the neck, some residual dysplasia, and a very small femoral head. In light of this, she will need additional surgeries down the road. To a reasonable degree of medical probability, as a teenager, Alyn will develop significant hip pain, leading to other complications, requiring at some point, a total hip arthroplasty. These typically last from 12 to 15 years for the initial replacement for a patient of Ms. Hotho's age. Revisions will need to be done in the future. Because of her very young age, there is a possibility that as she gets older, that at some point in time, further revision surgery with total hip arthroplasty will not be able to be performed. Moreover, in all certainty, she will develop arthritis in the hip, a painful condition that can cause other complications.

I hold of the opinions expressed in this report to a reasonable degree of medical certainty.

Sincerely,

Michael C. Ain, M.D.
 Associate Professor, Orthopaedic and Neurosurgery
 Johns Hopkins Hospital
 Baltimore, Maryland

Alyn Hotho, a minor v. Rossi, MD, et al.: Records reviewed by Michael C. Ain, M.D.

Complaint

Records of St. Vincent's Hospital
 Records of Dr. Edward Rossi
 Office note of Dr. Edward Rossi
 Records of Dr. Caroline Hiltebeitel
 Records of Dr. Harold van Bosse
 Records of Dr. Steven Burke
 Records from the Hospital of Joint Diseases
 Records of Dr. Timothy Radomisli
 Records of Dr. Tony Kahn
 Records of Dr. Daniel Gree
 Records of Dr. Avis Meeks Day

X-Rays:

New York University Medical Center	6/10/03 & 6/13/03 2/11/04	X-Ray of Pelvis - 2 X-Ray of Hips - 2 X-Ray of Hips - 6 X-Ray of Pelvis - 1 X-Ray of Left Hip - 4 X-Ray of Left Hip - 3 CT of Pelvis - 3 X-Ray of Pelvis - 2 X-Ray of Left Hip - 1 X-Ray of Hips - 2 X-Ray of Left Hip - 1
	7/9/03	
	6/16/03	X-Ray of Left Hip - 4
	3/15/04	X-Ray of Left Hip - 3
	6/16/03	CT of Pelvis - 3
	10/29/03	X-Ray of Pelvis - 2
	4/14/04	X-Ray of Left Hip - 1
	6/9/04	X-Ray of Hips - 2
	3/31/04	X-Ray of Left Hip - 1
Central Texas Pediatrics Orthopedics & Scoliosis Surgery (Dr. Kahn)	2/22/05	X-Ray of Right Hip - 2
Central Texas Pediatrics	5/25/06	AP and Frog Lateral X-rays of pelvis - 2

CURRICULUM VITAE

MICHAEL C. AIN, M.D.

NAME: Michael C. Ain

BIRTH DATE: March 15, 1961

BIRTHPLACE: New Hyde Park, New York

WORKPLACE: Division of Pediatric Orthopaedic Surgery
Johns Hopkins Hospital
JHOPC 5253
601 N. Caroline St.
Baltimore, Maryland 21287

HOME ADDRESS: 8 King Canute Court
Owings Mills, Maryland 21117

MARITAL STATUS: Married, Two children

CURRENT POSITION: Assistant Professor
Division of Pediatric Orthopaedic Surgery
Johns Hopkins Hospital
Baltimore, Maryland

Assistant Professor
Department of Neurosurgery
Johns Hopkins Hospital
Baltimore, Maryland

Director Residency Training
Department of Orthopaedic Surgery
Johns Hopkins Hospital
Baltimore, Maryland

EDUCATION:

Fellow	Division of Pediatric Orthopaedic Surgery Johns Hopkins Hospital Baltimore, Maryland	1995 - 1996
Resident	Orthopaedic Surgery Albany Medical College Albany, New York	1990 - 1995
Resident	Department of Pediatrics University of California at Irvine Irvine, California	1989 - 1990
M.D.	Albany Medical College Albany, New York	1985 - 1989
B.A. Math	Brown University Providence, Rhode Island	1980 - 1984
	Phillips Academy Andover, Massachusetts	

CERTIFICATION:

Diplomate, National Board of Medical Examiners	1991
State of New York Board of Medical Examiners	
Board Certified in Orthopaedic Surgery	1998

CERTIFICATION, cont'd:

American Academy Orthopaedic Surgery	2000
Honorary Degree Western Maryland	2000
Fellow POSNA	2000
Candidate Member, Scoliosis Research Society	2000
Member, Maryland Orthopaedic Association	2000-present

LICENSURE:

State	Date	Perm/Temp	Number
Maryland	1995-Present	Permanent	D47599

COMMITTEES:		
Member of Candidate Membership Committee AAOS		1996 - 2002
Committee Chairman - Maryland Orthopaedic Society Annual Meeting		April 2000
Editor Orthopaedic Blue Journal		2000 -Present
Reviewer Oakstone Journal		2000 - Present
Assistant Director of Residency Training		2001
Section Head -- National Johns Hopkins Review Course		2002 - 2004
Member- Operating Room Improvement Committee		1997 -2002

COMMITTEES, cont'd:

Member- Johns Hopkins Pediatric Trauma	1997 - Present
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Committee

Course Chairman – Johns Hopkins Orthopaedic Review Course	2005
Member – Graduate Medical Education Committee	2000-Present
Director – Orthopaedic Residency Program	2002 – Present
POSNA Nominating Committee	2003 – Present
POSNA ICL Committee	2004 – 2007

PUBLICATIONS:

1. Jackson, D.C.; et.al: Cardiovascular Function in Turtles During Anoxic and Acidosis In Vivo and In Vitro Studies. *American Journal of Physiology*, 1985.
2. Carl, A.; Ain, M.D.: Doppler Venous Ultrasound in the Detection of the Evolving Compartment Syndrome. *Journal of Orthopaedic Techniques*, 1(3): 161-165, September 1993.
3. Fletcher, F.; Ain, M.C.; and Jacobs, R.: Healing Foot Ulcers in Immunosuppressed Renal Transplant Patients. *CORR*, November 1993.
4. Carl, A.; Ain, M.C.: Fracture of the Radial Head: An Unusual Variant. *Journal of Orthopaedic Trauma*. 1994
5. Ain, M.C.; Bono, J.V.; Glockner, F.: The Removal of an Intramedullary Tibial Rob that was Originally Implanted Backwards. *Complications in Orthopaedics*. 1995
6. Ilhan Elmaci, M.D.; Michael C. Ain, M.D.; Roland R. Lee, M.D.; Jeannie-Marie E. Sheppard, B.A.; Daniele Rigamonti, M.D., F.A.C.S.; Orest Hurko, M.D.: Perioperative Intracranial Hemorrhage in Achondroplasia. *Journal of Neurosurgical Anesthesiology*. Vol 12(3), 217-220. 2000

PUBLICATIONS, cont'd:

7. Michael C. Ain, M.D.; Ilhan Elmachi, M.D.; Orest Hurko, M.D.; Richard Clatterbuck, M.D.; Roland R. Lee, M.D.; Daniele Rigamonti, M.D. F.S.C.S.: Reoperation For Spinal Restenosis in Achondroplasia. *Journal of Spine Disorders*. 13(2), 168-173. April 2000.
8. Wright M.J.; Ain, M.C.; Clough, M.V.; Bellus G.A.; Hurko, O.; McIntosh, I.: Achondroplasia and Nail Patella Syndrome: The Compound Phenotype. *J. Med. Genet.* 2000.
9. P. Justin Tortolani, M.D.; Michael C. Ain, M.D.; Nancy H. Miller, M.D.; Robert J. Brumback, M.D.; Paul D. Sponseller, M.D.: Tibial Nails for Femoral Shaft Fractures in Adolescents: "Off-Label Usage. *Journal of Orthopaedics*. 24(6).
10. Nancy Braverman, M.D.; Julie Hoover-Fong, M.D.; Michael C. Ain, M.D.: Mucopolysaccharidosis Type IV. *Pediatrics Journal*. 2001
11. Domb,B.G., Sponseller, P.D., Ain, M.C., Miller, N.H.: Comparison of Dynamic Versus Static External Fixation for Pediatric Femur Fractures. *Journal of Pediatric Orthopaedics*. Volume 22, #4. July/August 2002.
12. Ain, M.C., Andres, B.M., Somel, D.S.,Fishkin, Z., Frassica, F.J.: Total Hip Arthroplasty in Skeletal Dysplasias: Patient Selection, Preoperative Planning, and Operative Techniques. *Journal of Arthroplasty*. 19:1-7. January, 2004.
13. Ain, M.C., Shirley, E.D.: Spinal Fusion for Kyphosis in Patients with Achondroplasia. *Journal of Pediatric Orthopaedics*. July/August, 2004.
14. Ain, M.C., Browne, J.A.: Spinal Arthrodesis with Instrumentation for Thoracolumbar Kyphosis in Pediatric Achondroplasia. *Spine*. September 15, 2004.
15. Ain, M.C., Shirley, E., Pirouzmanesh, A., Hariri , A., Carson, B.S.: "Postlaminectomy Kyphosis in the Skeltally Immature Achondroplast". *Spine*. September, 2005.

PUBLICATIONS,cont'd:

16. Cascio, B.M., Wilckens, J.H., Ain, M.C., Toulson, C., Frassica, F.J.: Documentation of Acute Compartment Syndrome at an Academic Health-care Center. *Journal of Bone and Joint Surgery*, 87A(2); 346-350. 2005.

NATIONAL PRESENTATIONS:

1. Roger, J.; Ain, M.C.; Bono, J.V.; Williamson, S.C.: Intraoperative and Postoperative Drain Cultures in Hip and Knee Arthroplasty. Academy of Orthopaedic Surgeons, 60th Annual Meeting, San Francisco, California, 1993.
2. Roberts, J.; Ain, M.C.; Abramowitz, A.: Arthographic Classifications of Legg-Perthes Disease. Academy of Orthopaedic Surgeons, 63rd Annual Meeting, Atlanta, Georgia, 1996.
3. Roberts, J.; Ain, M.C.; Abramowitz, A.: Arthographic Classifications of Legg-Perthes Disease. POSNA, Phoenix, AL. 1996.
4. Ain, M.C.; Elmaci, I.; Hurko, O.; Sheppard, J.; Rigamonti, D.: Reoperation in Achondroplastic Stenosis. Southern Neurological Society. June 1996.
5. Ain, M.C.; Elmaci, I.; Hurko, O.; Shugert, B.; Rigamonti, D.: CT Scan versus MRI in the Evaluation of the Achondroplasia Spine. III International Meeting Skeletal Dysplasia. July 1997
6. Ain, M.C.: Spinal Deformity in Achondroplasia. Grand Rounds. Osaka University 1998.
7. Ain, M.C.: Philosophical and Psychological Aspects of ELL in Achondroplasia. Japanese National Meeting of External Fixations. 1998.
8. Ain, M.C.: Spinal Deformity in Achondroplasia. Orthopaedic Grand Rounds. Baylor University, Texas. 1999.

NATIONAL PRESENTATIONS, cont'd:

9. Ain, M.C.: Moderator – “Is There Life After Residency?” AAOS ICL – 2003.
12. Ain, M.C.: Speaker – Kiawah Deformity Course. Stryker Spine. May, 2003.
13. Ain, M.C., Browne, J.A.: “Spinal Fusion with Instrumentation for Progressive Thoracolumbar Kyphosis in Pediatric Achondroplasia”. Scoliosis Research Society.

September, 2003.

14. Ain, M.C., Leet, A., Shirley, E.D.: Genu Varum in Achondroplasia. AAOS. February, 2004.
15. Ain, M.C.: "Diagnosis and Non-Surgical Management of Common Skeletal Dysplasias". POSNA One Day Course. April, 2004.
16. Ain, M.C.: Participant/Panel – "Key Issues in Choosing and Starting Your Orthopaedic Practice: There Is Life After Residency". AAOS ICL – 2004.
17. Ain, M.C.: Chairman – Thoracic Deformity Course. Stryker Spine. May, 2004.
18. Ain, M.C.: Speaker - Children's Hospital. Santiago, Chile. September, 2004.
19. Ain, M.C.: Speaker – University of Utah. October, 2004.
20. Ain, M.C.: Section Leader – Orthopaedic Review Course. 2004.
21. Ain, M.C.: Evaluation, Treatment and Management of Skeletal Dysplasias. AAOS ICL – February, 2005.

VISITING PROFESSORSHIPS:

1. Ain, M.C.: Visiting Professor – Albany Medical College. June, 2000.
2. Ain, M.C.: Guest Speaker – Steven J. Bertisch Memorial Lecture. Albany Medical College. October, 2001.
- 3.. Ain, M.C.: Distinguished Visiting Professor – 32nd Annual Carrie Tingley Winter

Seminar. 2002.

4. Ain, M.C.: Visiting Professor – Christus Santa Rosa Hospital. San Antonio, Texas. April, 2003.
5. Ain, M.C.: Visiting Professor – University of Colorado – Health Science Center. Children’s Orthopaedic Day. April, 2004.
6. Ain, M.C.: Visiting Professor – John V. Banta – Connecticut Children’s Hospital. May, 2004.
7. Ain, M.C.: Visiting Professor – Akron Children’s Hospital. August, 2004.

BOOK CHAPTERS:

1. M.C. Ain – Cervical Instability In Drennan, et al Orthopaedic Pocket Procedure Sites: Pediatrics. The McGraw-Hill Companies. 2003.
2. M.C. Ain, G. Naseef- Skeletal Dysplasias In Essentials of Orthopaedic Surgery. Pediatric Orthopaedics. Lippincott & Williams. 2003.
3. M.C. Ain, B. Cascio – Achondroplasia In Spinal Complications. Vaccaro, et al. Lippincott & Williams. 2004.

FUNDING:

Synthes Spine - \$30,000/year – Evaluate Natural History of Low Back Problems in Achondroplasia

General Clinical Research Center – \$490,000 over 3 years- Nail Patella Syndrome: Expanding the phenotype of a classical skeletal dysplasia syndrome

COMMUNITY SERVICE:

Medical Advisory Board, LPA 1996- Present
Board of Directors, Human Growth Foundation 1996-2000

